

Amendments to the Specification

IN THE SPECIFICATION:

Please replace the paragraph from page 3, line 20, to page 4, line 1, with the following amended paragraph:

A catalytic hydrogenation process ~~of fluorinated compounds nitriles to amines for~~ preparing fluorinated amines from nitrile compounds, by using metal-Raney as catalyst (USP 6,054,615), in particular Co-Raney, is known. However said process is not selective since it ~~is not solely obtained~~ does not solely obtain the primary amine, but a primary, secondary and tertiary amine mixture which are difficult to be separated.

Please replace the paragraph from page 4, line 14, to page 7, line 5, with the following amended paragraph:

An object of the present invention is therefore a high yield process for the preparation of perfluoropolyethers with aldehyde, alcohol, amine end groups, having structure (I):



wherein:

T is -F, C₁-C₃ perfluoroalkyl, -CH₂OH, -CH₂NH₂, -CHO;

T' = T with the proviso that when T is F or C₁ - C₃ perfluoroalkyl, T' is -CH₂OH, -CH₂NH₂, -CHO;

X, X', equal to or different from each other, are -F or -CF₃;

R_f is selected from:

- $(\text{C}_2\text{F}_4\text{O})_m (\text{CF}_2\text{CF}(\text{CF}_3)\text{O})_n (\text{CF}_2\text{O})_p (\text{CF}(\text{CF}_3)\text{O})_q$ -

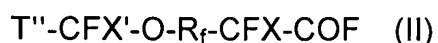
wherein:

the sum $n+m+p+q$ ranges from 2 to 200, the $(p+q)/(m+n+p+q)$ ratio is lower than or equal to 10:100, preferably comprised between 0.5:100 and 4:100, the n/m ratio ranges from 0.2 to 6, preferably from 0.5 to 3; m , n , p , q are equal to or different from each other and when m , n range from 1 to 100, preferably from 1 to 80, then p , q range from 0 to 80, preferably from 0 to 50; the units with n , m , p , q indexes being statistically distributed along the chain;

- $(\text{CF}_2\text{CF}_2\text{CF}_2\text{O})_r$ - wherein r ranges from 2 to 200,
- $(\text{CF}(\text{CF}_3)\text{CF}_2\text{O})_s$ - wherein s ranges from 2 to 200, comprising the

following steps:

A) preparation of perfluoropolyethers of formula

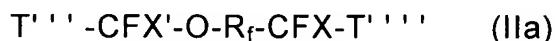


wherein T' ' is -COF, -F, or C₁-C₃ perfluoroalkyl, X, X', and R_f

are as above, by reduction of the corresponding perfluoropolyethers containing peroxidic bonds, obtainable by photooxidation of tetrafluoroethylene and/or perfluoropropene, using gaseous hydrogen in the presence of a catalyst formed by metals of the VIII group supported on metal fluorides, optionally in the presence of perfluorinated solvents, inert at a temperature from 20°C to 140°C,

preferably from 80°C to 130°C and at a pressure between 1 and 50 atm, preferably between 1 and 10 atm;

- B) treatment of the formula (II) compounds with inorganic chlorides, preferably CaCl_2 , by heating at a temperature in the range 100°-150°C obtaining perfluoropolyethers having ~~acylchloride~~ acylfluoride -COF end groups;
- B') treatment of the formula (II) acylchloride or of the corresponding ester or of the corresponding acylchloride with gaseous ammonia, obtaining the corresponding amide, subsequently dehydrated with a dehydrating agent, for example with P_2O_5 , at a temperature in the range 150°-200°C, ~~preferably~~ preferably at 170°C, with the obtainment of perfluoropolyethers with nitrile -CN end groups;
- C) reduction of the perfluoropolyethers with acylchloride end groups, obtained in step B), or with nitrile end groups, obtained in step B'), of formula (IIa):



wherein:

$\text{T}'\text{'}'\text{' = -F, C}_1\text{-C}_3\text{ perfluoroalkyl, -CN, -COC1,}$

$\text{T}'\text{'}'\text{'}' = \text{T}'\text{'}'\text{'}$ with the proviso that when $\text{T}'\text{'}'\text{'}$ is -F or $\text{C}_1\text{-C}_3$ perfluoroalkyl,

$\text{T}'\text{'}'\text{'}'$ is -CN, -COCl,

by using gaseous hydrogen in the presence of a catalyst constituted by metals of the VIII group selected from Pd, Rh, Ru, supported on solid

metal fluorides, stable under the reaction conditions, at a temperature from 20°C to 150°C, preferably from 80°C to 120°C and at a pressure between 1 and 50 atm, preferably between 1 and 10 atm, optionally in the presence of inert solvents, obtaining the formula (I) compounds.

Please replace the paragraph from page 7, line 6, to page 7, line 12, with the following amended paragraph:

Step A) is described in a copending patent application MI2002A 001733 (corresponding to US Application No. 10/631,862) filed at the same time as the present application and herein incorporated by reference and, in particular step A) can be carried out in a continuous or discontinuous way, preferably removing the HF formed during the reaction, for example by means of the same inlet hydrogen flow.

Please replace the paragraph from page 18, line 13 to page 18, line 18, with the following amended paragraph:

One operates according to the methods described in the Example 44 1, by feeding in hydrogen flow 4 g of perfluoropolyether diacylchloride (V) of the Example 10. A conversion of the perfluoropolyether diacylchloride of 100% and a yield in perfluoropolyether dialdehyde of 16.1% are obtained.